

## ABSTRACT

High-impedance optical electrodes modulate light in response to a life-form bio-  
5 potential and then converts the modulated light to an electrical signal that provides  
traditional EEG and EEC type output. Light splitters are used to provide multiple  
electrodes and an electronic reference source. A pilot tone is used to achieve high  
sensitivity and synchronize multiple units while an optical phase-shift modulator is used  
to reduce optical noise.